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Abstracts of Short Communications and Posters

Section:

10. Partial Differential Equations

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Systems not of Cauchy–Kovalevskaya type
Systems of partial differential equations

$$A_0 D_t u + A_1(D_x)u = f(t,x), \quad \det A_0 = 0, \tag{1}$$

are called systems not of Cauchy–Kovalevskaya type. Examples of such systems are the linearized Navier–Stokes system, the Sobolev system, the system of internal gravitational waves, the system of Rossby waves, the system of Langmuir waves in plasma and so on. In the paper we define some classes of systems of the form (1) and establish solvability conditions of Cauchy problem for the classes. The theory of boundary value problems is contained in the joint book with S. V. Uspenskii.
Reference: G. V. Demidenko, and S. V. Uspenskii, Equations and Systems not Solved for the Highest Derivative with respect to Time, Nauchnaya Kniga, Novosibirsk, 1998. (Russian).